

## PATENT COOPERATION TREATY

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**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 47388+A		<b>FOR FURTHER ACTION</b>		See Form PCT/PEA/416
International application No. PCT/IT2004/000413		International filing date (day/month/year) 27.07.2004	Priority date (day/month/year) 01.08.2003	
International Patent Classification (IPC) or national classification and IPC B31F1/07				
Applicant FABIO PERINI S.P.A. et al.				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 6 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand  22.02.2005		Date of completion of this report  28.12.2005		
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer  Farizon, P  Telephone No. +49 89 2399-7893 		

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/IT2004/000413

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-11 as originally filed

**Claims, Numbers**

1-43 received on 22.11.2005 with letter of 16.11.2005

**Drawings, Sheets**

1/4-4/4 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing *(specify)*:
  - ☐ any table(s) related to sequence listing *(specify)*:
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing *(specify)*:
  - ☐ any table(s) related to sequence listing *(specify)*:

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/IT2004/000413

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	3,22
	No: Claims	1,2,4-21,23-43
Inventive step (IS)	Yes: Claims	3,22
	No: Claims	1,2,4-21,23-43
Industrial applicability (IA)	Yes: Claims	1-43
	No: Claims	

2. Citations and explanations (Rule 70.7):

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

Reference is made to the following documents:

D1 : EP 0 264 676

D2 : FR 2824778

D3 : EP 0 738 588

**2 Lack of novelty and Inventive step**

**2.1 Claims 1,19**

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1,19 is not new in the sense of Article 33(2) PCT.

The document D1 discloses a method (an apparatus and a sheet material) comprising at least two plies coupled to each other by gluing (col.3,l.15-17), , comprising the phases of producing on a first ply protuberances defining embossed decorative motifs (col.3,l.11-13), applying a glue to at least some of the protuberances defining the decorative motifs (col.4,27,28,29 : adhesive is applied to the surface of the already embossed webs), making a second ply adhere to the first ply by mean of said glue (col.4,l.31-34), further comprising applying a coloured pattern prior to embossing (col.3,l.35-42 : one or more layer submitted to printing).

For the same reasons the apparatus according to claim 19 is not novel.

**2.2 Claims 2,21**

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 2,21 does not involve an inventive step in the sense of Article 33(3) PCT.

The subject matter of claim 2 differs from D1 in that the glue is applied to the first ply while the first ply is still in contact with the embossing roller.

The problem solved is to improve the application of adhesive.

D2 discloses an associated embossing and glueing unit ("module de gaufrage-encollage" (10): glue is applied to the first ply by the roller (24) while the ply is in contact with the embossing roller (18)), in order to solve the abovementioned problem.

Hence the skilled person would consider the teachings of D2 and would arrived to the solution according to claim 2.

For the same reasons the apparatus according to claim 21 is not novel.

**2.3 Claim 28**

Multiply sheet material provided with decorative embossing, with glue applied to the protuberance, and colored pattern is known from D1, D2, D3.

**2.4** Dependent claims 4-18,20,23-27,29-43 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents cited in the search report.

**3. Claims 3,22**

The subject matter of claims 3,22 is not disclosed nor rendered obvious by the available prior art.

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

PCT/IT2004/000413

Amended CLAIMS

1. A method to produce an embossed web material, comprising at  
5 least two plies coupled to each other by gluing, comprising the phases of:  
producing on a first ply (V1) protuberances defining embossed decorative  
motifs; applying a glue to at least some of the protuberances defining the  
decorative motifs; making a second ply (V2) adhere to the first ply (V1) by  
means of said glue; characterized in that a colored pattern is applied to said  
10 first ply (V1) prior to producing said embossed decorative motifs by means of  
embossing.

2. Method as claimed in claim 1, characterized in that said first ply  
is embossed between a pressure roller (17) and an embossing roller (15)  
provided with protuberances defining said decorative motifs, and that said  
15 glue is applied to said first ply while the first ply is still in contact with said  
embossing roller.

3. Method as claimed in claim 1 or 2, characterized by embossing  
the first ply (V1) a first time to produce thereon a first series of protuberances  
(P1) forming an embossed background pattern and subsequently embossing  
20 said first ply (V1) again to produce thereon a second series of protuberances  
(P2) of a greater height and lesser density with respect to the protuberances  
of the first series and defining said decorative motifs.

4. Method as claimed in claim 1 or 2 or 3, characterized by the  
steps of:

25 - embossing the first ply (V1) to produce thereon a first series of  
protuberances (P1) forming an embossed background pattern;  
- applying an ink to at least some of the protuberances (P1) of said first  
series to form said colored pattern;  
- embossing said first ply (V1) again to produce thereon a second series  
30 of protuberances (P2) of a greater height and lesser density with respect  
to the protuberances of the first series and defining said decorative  
motifs, the protuberances of the first series and of the second series  
projecting from the same side of the ply;  
- applying to the protuberances (P2) of the second series a glue (C);

- making a second ply (V2) adhere to the first ply (V1) by means of said glue.

5. Method as claimed in claim 3 or 4, characterized in that the protuberances (P1) of the first series have an average density ranging from 20 to 100 protuberances/cm<sup>2</sup> and preferably from 30 to 90 protuberances/cm<sup>2</sup> and even more preferably from 30 to 60 protuberances/cm<sup>2</sup>.

6. Method as claimed in claim 3 or 4 or 5, characterized in that the protuberances of the first series occupy a percentage lower than 25% of the total surface of the first ply and preferably between 1% and 20% of the total surface of the first ply and more preferably between 7 and 10 % of the total surface of the first ply.

7. Method as claimed in one or more of the previous claims, characterized in that said glue is colored.

8. Method as claimed in claim 7, characterized in that said glue and said ink have different shades of a same color.

9. Method as claimed in one or more of the previous claims, characterized in that said second ply (V2) is embossed with background embossing prior to coupling with the first ply.

10. Method as claimed in claim 9, characterized in that said second ply is embossed with a third series of protuberances with an average density ranging from 20 to 100 protuberances/cm<sup>2</sup> and preferably from 30 to 90 protuberances/cm<sup>2</sup> and even more preferably from 30 to 60 protuberances/cm<sup>2</sup>.

11. Method as claimed in claim 9 or 10, characterized in that the protuberances of said third series occupy a percentage below 25% of the total surface of the second ply and preferably ranging from 5 to 20% of the total surface of the second play and more preferably from 7 to 10% of the total surface of the second ply.

12. Method as claimed in one or more of the previous claims, characterized in that the decorative motifs formed by the protuberances of the second series are distributed according to a density not exceeding 3 motifs/cm<sup>2</sup> and preferably around 1-5 motifs/dm<sup>2</sup>.

13. Method as claimed in one or more of the previous claims, characterized in that said colored pattern is produced by printing the first



smooth ply.

14. Method as claimed in claim 13, characterized in that said first ply is micro-embossed after said colored pattern is applied.

15. Method as claimed in one or more of the previous claims, characterized in that said printed pattern is a background pattern distributed essentially uniformly over the entire surface of the ply.

16. Method as claimed in one or more of the preceding claims, characterized in that said first ply is provided with a colored background pattern constituted by stippling or by a series of lines.

17. Method as claimed in at least claim 4, characterized in that said protuberances of the first series are colored to form a colored background pattern.

18. Method as claimed in one or more of the previous claims, characterized in that said colored pattern is phased with said decorative patterns to form a composite printed and embossed pattern.

19. A device to produce an embossed web material, including: an embossing unit (13) with an embossing roller (15) equipped with a series of protuberances (15P) defining decorative motifs; a glue dispenser (19), arranged adjacent said embossing roller (15) and co-acting therewith to apply a glue to a first ply (V1) embossed by said embossing unit (13) when said first ply is still in contact with said embossing roller; a laminating member (21) disposed around the periphery of the embossing roller (15), downstream of the glue dispenser (19) with respect to the direction of feed of said first ply (V1) to apply by lamination a second ply (V2) to the first ply (V1); characterized in that, disposed upstream of said embossing unit (13), along the path of the first web material (V1), are means to apply a colored pattern to said first ply (V1), prior to embossing by means of said embossing roller (15).

20. Device as claimed in claim 19, characterized in that said means to apply a colored pattern on the first ply comprise at least a printing unit.

21. Device as claimed in claim 19 or 20, including in combination: a first embossing unit (3) with a first embossing roller (5) equipped with a first series of protuberances (5P); downstream of said first embossing unit, a second embossing unit (13) with a second embossing roller (15) equipped with a second series of protuberances (15P) of greater height and lesser

density with respect to the protuberances of said first series, said protuberances defining decorative motifs, said glue dispenser (19) being arranged around said second embossing roller, to apply a glue at the protuberances of said second embossing roller; said laminating member (21) being associated with said second embossing roller (15).

22. Device as claimed in claims 20 and 21, characterized in that said at least one printing unit (9) is arranged around said first embossing roller (5) and applies an ink to said first ply (V1) at some at least of the protuberances of the first embossing roller.

23. Device as claimed in claim 21 or 22, characterized in that the protuberances of the first embossing roller (5) have an average density ranging from 20 to 100 protuberances/cm<sup>2</sup> and preferably from 30 to 90 protuberances/cm<sup>2</sup> and even more preferably from 30 to 60 protuberances/cm<sup>2</sup>.

24. Device as claimed in one or more of claims 19 to 23, characterized in that said glue dispenser (19) contains a colored glue.

25. Device as claimed in one or more of claims 19 to 24, characterized in that the decorative patterns defined by the protuberances (15P) of the second series have a density not exceeding 3 motifs/cm<sup>2</sup> and preferably ranging from 1 to 5 motifs/dm<sup>2</sup>.

26. Device as claimed in at least claim 20, including in combination: a first embossing unit (3) with a first embossing roller (5) equipped with a first series of protuberances (5P); downstream of said first embossing unit (3), a second embossing unit (13) with a second embossing roller (15) equipped with a second series of protuberances (15P) of greater height and lesser density with respect to the protuberances of said first series, said protuberances defining decorative motifs, said glue dispenser (19) being associated with said second embossing roller, to apply a glue at the protuberances of said second embossing roller; said laminating member (21) being associated with said second embossing roller (15); and wherein said at least a printing unit (9), which applies an ink to said first ply (V1), is disposed upstream of said second embossing unit and preferably upstream of said first embossing roller (5).

27. Device as claimed in one or more of claims 20 to 26,

characterized in that said printing unit and said embossing roller equipped with protuberances (15P) defining said decorative patterns are phased with each other to produce composite printed and embossed patterns.

28. A sheet material comprising at least a first ply (V1) and a second  
5 ply (V2) glued together, wherein said first ply is equipped with at least a decorative embossing formed by a series of protuberances (P2); said first and said second ply being glued together by means of a glue applied at some at least of the said protuberances; characterized in that said first ply is equipped with a colored pattern.

10 29. Material as claimed in claim 28, characterized in that it comprises a first ply (V1) and a second ply (V2) glued together, wherein said first ply is equipped with background embossing formed by a first series of protuberances (P1) and decorative embossing formed by a second series of  
15 protuberances (P2) of lesser density with respect to the protuberances of the first series; said first and said second ply being glued together by a glue applied at some at least of said protuberances of the second series, the protuberances of the first series being essentially free of glue.

30. Material as claimed in claim 29, characterized in that at least some of the protuberances of the first series are colored.

20 31. Material as claimed in claim 28 or 29 or 30, characterized in that said glue is colored.

32. Material as claimed in claims 30 and 31, characterized in that said protuberances of the first series are colored with a different shade of the same color with which the glue is colored.

25 33. Material as claimed in claim one or more of claims 29 to 32, characterized in that the protuberances of the first series have an average density ranging from 20 to 100 protuberances/cm<sup>2</sup> and preferably from 30 to 90 protuberances/cm<sup>2</sup> and even more preferably from 30 to 60 protuberances/cm<sup>2</sup>.

30 34. Material as claimed in one or more of claims 28 to 33, characterized in that the colored surface of said first ply is lower than 25% of the total surface of the first ply and preferably between 1% and 20% of the total surface of the first ply and more preferably between 7% and 10 % of the total surface of the first ply.

35. Material as claimed in one or more of claims 29 to 34, characterized in that the protuberances of the second series define decorative motifs distributed according to a density not exceeding three motifs/cm<sup>2</sup> and preferably ranging from 1 to 5 motifs/dm<sup>2</sup>.

5 36. Material as claimed in one or more of claims 28 to 35, characterized in that said second ply (V2) has a background embossing defined by a third series of protuberances (P3).

37. Material as claimed in claim 36, characterized in that the protuberances of said third series are distributed with a density ranging from  
10 20 to 100 protuberances/cm<sup>2</sup> and preferably from 30 to 90 protuberances/cm<sup>2</sup> and even more preferably from 30 to 60 protuberances/cm<sup>2</sup>.

38. Material as claimed in one or more of claims 28 to 35, characterized in that said second ply is free of protuberances added to the ply after its production.

15 39. Material as claimed in one or more of claims 28 to 38, characterized in that the base color of said first and second ply is neutral and preferably white.

40. Material as claimed in one or more of claims 29 to 39, characterized in that said colored pattern is a background pattern constituted  
20 by coloring the protuberances of said first series of protuberances forming the background embossing.

41. Material as claimed in one or more of claims 28 to 40, characterized in that said colored pattern and said decorative embossing are phased with each other to form composite printed and embossed decorations.

25 42. Material as claimed in claim 41, characterized in that said printed colored pattern is a background pattern distributed essentially uniformly over the entire surface of the ply.

43. Material according to claim 42, characterized in that said printed background pattern is constituted by a stippling or by a series of lines.

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